

CLAIMS

1. A piezoelectric acoustic element using a piezoelectric element as a vibration source, comprising:

a hollow casing having at least one opening;

a piezoelectric element that is disposed in said casing and bends when
5 a voltage is applied thereto; and

a diaphragm provided at the opening of said casing;

wherein said piezoelectric element and said diaphragm are joined through a vibration transmitting member.

2. The piezoelectric acoustic element according to Claim 1, wherein one end or both ends of said piezoelectric element in a longitudinal direction is fixed to an inner surface of said casing through a support member.

3. The piezoelectric acoustic element according to Claim 2, wherein said support member is elastic.

4. The piezoelectric acoustic element according to Claim 1, further comprising two or more diaphragms and/or vibration transmitting members that are different as regards at least one of thickness, materials, and size.

5. The piezoelectric acoustic element according to Claim 1, further comprising two diaphragms that are arranged opposite to each other so that said piezoelectric element is in between them, wherein said two diaphragms are joined to said piezoelectric element through respective vibration
5 transmitting members.

6. The piezoelectric acoustic element according to Claim 1, further comprising an elastic plate joined to said piezoelectric element, wherein said elastic plate is joined to said diaphragm through said vibration transmitting member.

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7. The piezoelectric acoustic element according to Claim 1, wherein said piezoelectric element has a laminated structure in which conductive layers and piezoelectric material layers are alternately laminated.

8. The piezoelectric acoustic element according to Claim 1, wherein said vibration transmitting member is a spring.

9. The piezoelectric acoustic element according to Claim 1, wherein said diaphragm is one of a polyethylene terephthalate film, a polyethersulfone film, a polyester film, and a polypropylene film.

10. An acoustic device provided with the piezoelectric acoustic element according to Claim 1.

11. A portable terminal device provided with the piezoelectric acoustic element according to Claim 1.